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Sanford Fleeter

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This
Nine graduate students participated in the Air Force Research in Aero Propulsion Technology (AFRAPT) Program during the time period from August 1989 through August 1990. Two students have completed their M.S.M.E. programs and are currently employed at one of the AFRAPT participating companies. Four students have nearly completed their thesis research, with one student having withdrawn. The other two continuing and new students have initiated their thesis research and are making good progress.

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ANNUAL SUMMARY REPORT

August 1989 - August 1990

RESEARCH AS PART OF THE AIR FORCE RESEARCH IN AERO PROPULSION TECHNOLOGY (AFRAPT) PROGRAM

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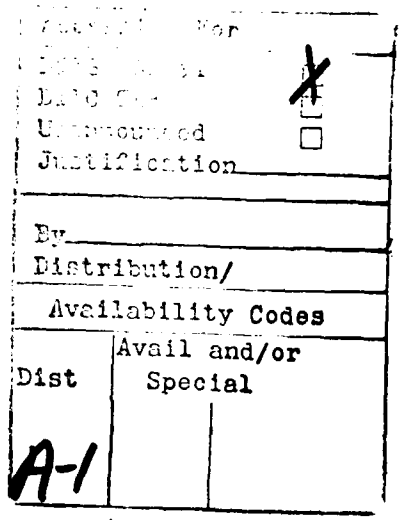

Sanford Fleeter

August 1990

Thermal Sciences and Propulsion Center
School of Mechanical Engineering
Purdue University
West Lafayette, Indiana 47907

Prepared for

Directorate of Aerospace Sciences
Air Force Office of Scientific Research

The status of the nine graduate students who participated in the Air Force Research in Aero Propulsion Technology (AFRAPT) Program at Purdue during the time period from August 1989 through August 1990 is summarized in the following.

Michael Andruszkiewicz

Thesis Advisor:	Professor Sanford Fleeter
Research Topic:	Aero-Mechanics of Advanced Turbomachine Blade Rows, including Separated Flow Effects
Company Affiliation:	General Electric - Cincinnati
Current Status:	Mr. Andruszkiewicz has completed his research and is currently writing his thesis.

Scott Brooks

Thesis Advisor:	Professor Sanford Fleeter
Research Topic:	
Company Affiliation:	General Electric - Cincinnati
Current Status:	Mr. Brooks decided not to pursue an M.S. M.E. degree and has dropped out of Purdue and the AFRAPT Program.

Greg Henderson

Thesis Advisor:	Professor Sanford Fleeter
Research Topic:	Forced Response Unsteady Aerodynamics of Three Dimensional Blade Rows
Company Affiliation:	General Electric - Cincinnati
Current Status:	Mr. Henderson is in the process of completing the experimental part of his Ph.D. Thesis research. Based on his continued excellent performance, he is considered to be one of our most outstanding graduate students.

Kuk Kim

Thesis Advisor:	Professor Sanford Fleeter
Research Topic:	Flow Induced Structural Dynamics of Multistage Compressor Blade Rows
Company Affiliation:	General Electric - Cincinnati
Current Status:	Ms. Kim has completed the series of experiments for her M.S.M.E. Thesis research and is currently completing the data analysis and writing of her thesis. Ms. Kim will be continuing both her affiliation with the AFRAPT Program and her graduate studies at Purdue University, pursuing a Ph.D. under the direction of Professor Sanford Fleeter

Patrick Lawless

Thesis Advisor:	Professor Sanford Fleeter
Research Topic:	Active Suppression of Aerodynamic Instabilities
Company Affiliation:	Pratt & Whitney - Florida
Current Status:	Mr. Lawless has very successfully completed his coursework and Ph.D. qualifying exams. An incompressible flow model for active control of rotating stall has been developed. Also, the planning of the experimental portion of his research is nearly complete, with the needed experimental hardware fabrication in process.

Vernon McFarland

Thesis Advisor:	Professor W. G. Tiederman
Research Topic:	Periodic Unsteady Flow in Turbine Blade Rows
Company Affiliation:	Allison Gas Turbines
Current Status:	Mr. McFarland has successfully completed his M.S.M.E. program and is currently employed at Allison Gas Turbines.

Mathew D. Montgomery

Thesis Advisor:	Professor Sanford Fleeter
Research Topic:	Unsteady Flow in Turbomachine Blade Rows
Company Affiliation:	United Technologies Research Center
Current Status:	Mr. Andruszkiewicz has completed his research and is currently writing his thesis.

Jack White

Thesis Advisor:	Professor W.G. Tiederman
Research Topic:	The Effect of Adverse Pressure Gradient on the Turbulent Burst Structure in Low Reynolds Number Equilibrium Boundary Layer Flows
Company Affiliation:	Allison Gas Turbines
Current Status:	Mr. White has successfully completed his M.S.M.E. program and is currently employed at Allison Gas Turbines.

James Wolff

Thesis Advisor:	Professor Sanford Fleeter
Research Topic:	Unsteady Viscous Flows in Airfoil Cascades
Company Affiliation:	Garrett Engine Division
Current Status:	Mr. Wolff has completed his M.S.M.E. program. Also, he has very successfully completed the majority of his Ph.D. coursework and has initiated his CFD thesis research.